



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,390	01/11/2000	Michael P. Wagner	1956/126	4259

2101 7590 09/11/2002

BROMBERG & SUNSTEIN LLP  
125 SUMMER STREET  
BOSTON, MA 02110-1618

EXAMINER

TO, BAOQUOC N

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/480,390

Applicant(s)

WAGNER, MICHAEL P.

Examiner

Baoquoc N To

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 June 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                                   |                                                                             |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Claims 1-40 are pending in this application. Claims 1-40 are represented for examination. This office action responds to the Response to amendment filed June 25, 2002

#### ***Response to Arguments***

2. Applicant's arguments filed on 06/25/2001 have been fully considered but they are not persuasive.

The applicant argues, "in Tucker, the second process (i.e., the acquire process) never sends an inquiry to the first process (and therefore the first process never receives an inquiry from the second process) inquiring whether the first process owns the resource. The examiner respectfully disagrees because in Tucker the second process tries to acquire the lock, and if the lock is not acquired the lock is held by other thread [col. 4, lines 11-13]. This teaches in the case the second thread cannot acquire the lock because the prior thread held the lock. This means the second thread is notified by the prior schedule that it holds the lock. Therefore, the acquiring process is also the inquiry process.

The applicant argues, "Tucker teaches a method for providing mutual exclusion (col. 1, line 58) for a resource by a first process [52, fig. 3] in a computer system having a plurality of processes involving receiving an inquiry from a second process inquiring whether said first process (52, try to acquire mutex lock) owns said resource [col. 4, lines 7-12]". The examiner respectfully disagrees because in the background of Tucker's invention, Tucker teaches, "a multiple exclusion lock (i.e., mutex) [col. 1, lines

Art Unit: 2172

58-59]. Furthermore, Tucker teaches, "thread 5f owns mutex lock 9a momentarily and that no other thread can access data element 9 while the owning the thread runs" [col. 1, lines 61-63]. Further in the invention, the second thread in Tucker is notified by the prior thread that the lock cannot be obtained because prior thread is holding the lock [col. 7, lines 7-12].

The applicant also argues that the examiner's conclusion "it would have been obvious to one ordinary skill in the art at the time of the invention was made to acquire lock, the second process must identify the owner of the lock for requesting to access the resource does not appear to be relevant to a determination of patentability because (1) the second process of Tucker does not identify the owner of the lock for requesting access to the resource; (2) it is the first process and not the second process of the prevent invention that identifies the owner of the resource; and (3) the first process of the present invention does not identify the owner of the resource for requesting access to the resource." The examiner respectfully disagrees with the argument because in Tucker "if the lock is not acquire at (e.g., the lock is held by a prior schedule thread), the thread owing the particular mutex lock is identifies 54," [col. 4, lines 11-13]. This clearly indicates that the second process of Tucker identifies the owner of the lock (prior threads). The examiner respectfully disagrees with the argument (2) because in the applicant invention and also in the claim 1, the second process sends an inquiry to the first process to identify the owner of the resource. In the same way Tucker's second process tries to acquire the lock and if the lock is not acquired (e.g., the lock is held by a prior schedule thread) [col. 4, lines 9-12]. This means, the prior schedule thread notifies

Art Unit: 2172

the second thread the prior thread currently hold the lock (owner) of the resource.

Examiner respectfully disagrees with the argument (3) because the first process of present invention does not identify the owner of the resource for requesting access to the resource; however, it is the second process of the applicant's invention that needs to identify the owner of the lock.

The applicant also argues that "Tucker requires that the lock be in existence before the second process can try to acquire the resource, but in the present invention of claims 1, 11, 21, and 31, the lock is not created until after the second process tries to acquire the resource by sending an inquiry to the first process." The examiner respectfully disagrees because the claim language does not explicitly recite the lock is created after the second process tries to acquire the resource by sending an inquiry to the first process. The claim only recites, "creating the lock for the said resource indicating owner of the process". Furthermore, the claim language does not recite the created lock is for the first owner or the second owner.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tucker (US. Patent No. 6,223,204).

Regarding on claims 1, 11, 21, and 31, Tucker teaches a method for providing mutual exclusion (col. 1, line 58) for a resource by a first process [52, fig. 3] in a computer system having a plurality of processes, the method comprising:

Receiving an inquiry from a second process inquiring whether said first process (52, try to acquire mutex lock) owns said resource [col. 4, lines 7-12];

Tucker does not explicitly teach determining an owner process for said resource other than said first process; and creating a lock for said resource indicating said owner process. However, Tucker teaches "if the lock is not acquired (e.g. the lock is held by other prior schedule thread), the thread owning the particular mutex lock is identify 54" [col. 4, lines 12-14]. In addition, the second process can "acquire the mutex lock by repeating the step 52-56." [col. 4, lines 17-18]. The second thread can attempt to acquire the lock again through the same process and lock the resource when the lock is available. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to acquire lock; the second process must identify the owner of the lock for requesting to access the resource.

Regarding on claims 2, 12, 22 and 32, Tucker does not explicitly teach determining the owner process for the resource other than the first process comprises:

determining that the first process is not the owner process; and determining thereby that the second process is the owner process. However, Tucker teaches the first process own the lock at "54" and when the lock is free at (56a) and the second

Art Unit: 2172

process can acquire the lock at the second time around at (52). This implies the second process is the owner process. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the second process owning the lock when the first process release the lock or lock is available.

Regarding on claims 3, 13, 23, and 33, Tucker teaches determining the owner notification message identifies the second process as the owner process [col. 5, lines 39-44].

Regarding on claims 4, 14, 24, and 34, Tucker teaches the owner notification message identifies the second process as the owner process [col. 5, lines. 39-44].

Regarding on claims 5, 15, 25 and 35, Tucker teaches the owner notification message identifies a third process as the owner process [col. 5, lines 39-44].

Regarding on claims 6, 16, 26 and 36, Tucker teaches determining the owner process for the resource other than the first process comprises:

Receiving an inquiry response from a third process indicating that said third process is not the owner process; and determining thereby that the second process is the owner process [col. 4, lines 8-18].

Regarding on claims 7, 17, 27 and 37, Tucker teaches determining the owner process for the resource other than the first process comprises:

Receiving an inquiry response from a third process indentifying said third process as the owner process [col. 4, lines 8-18].

Regarding on claims 8, 18, 28, and 38, the lock comprises:

A resource identifier [col. 4, 9-11]; and

A home field identifying the owner process [col. 4, lines 13-14].

Regarding on claims 9, 19, 29, and 39, Tucker teaches the owner process notification message identifies the second process as the owner process further comprising:

Determining that the first process requires access to the resource [col. 4, lines 11-14];

Identifying the owner process using the lock [col. 4, 14-15]; and

Sending a request message to the owner process requesting access to the resource without first sending an inquiry message to the owner process [col. 5, lines 12-14].

Regarding on claims 10, 20, 30 and 40, Tucker teaches identifying the owner process using the lock comprises:

finding the lock among a plurality of locks based upon a resource identifier [col. 4, lines 8-15]; and obtaining the owner process from the lock [col. 4, lines 8-15].

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the



Art Unit: 2172

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Contact Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is (703) 305-1949 or via e-mail [baoquoc.to@uspto.gov](mailto:baoquoc.to@uspto.gov). The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached at (703) 305-4393.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is assigned are as follow:

- (703) 746-7238 [After Final Communication}]
- (703) 746-7239 [Official Communication]
- (703) 746-7240 [Non-Official Communication]

Application/Control Number: 09/480,390  
Art Unit: 2172

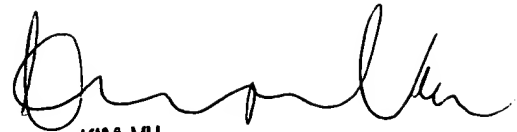
Page 9

Hand-delivered responses should be brought to:

Crystal Park II  
2121 Crystal Drive  
Arlington, VA 22202  
Fourth Floor (Receptionist).

Baoquoc N. To

August 31, 2002



KIM VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100